of an MRSA skin infection, resulting in more inflammation and larger abscesses than in MRSA-infected mice that were not treated with the antibiotic.

MRSA infections are still sometimes treated with β-lactams, but these should be used with other antibiotic classes, the authors write.
Cell Host Microbe 18, **604–612 (2015)**

MUSCLE BIOLOGY

Dog saved from muscular disease

A golden retriever with the mutation for Duchenne muscular dystrophy was found to have working muscles because of a compensatory mutation in another gene.

The dog, Ringo, was bred by researchers to have the mutated version of a protein called dystrophin, but he still had normal muscles. Louis Kunkel at Boston Children's Hospital in Massachusetts, Mayana Zatz at the University of São Paulo in Brazil and their team analysed the genomes of Ringo and one of his male offspring that also had the mutation and normal muscles. They identified a separate mutation in a development gene, *Jagged1*, that resulted in higher levels of Jagged1 in Ringo and his son than in 31 affected dogs.

This mutation may compensate for the muscle-regeneration problems caused by a lack of dystrophin, the authors suggest.
Cell **http://doi.org/87s (2015)**

BIOTECHNOLOGY

Adult cells edited and reprogrammed

A one-step procedure can correct genetic mutations in body cells and reprogram them into stem cells.

Stem cells derived from patients' tissues could generate replacement tissue that is not rejected by the immune system. Current methods have stem-cell yields of only 0.5–0.9%, and require extra steps to correct any mutations. Sara Howden, now at the Murdoch Children's Research Institute in Parkville, Australia, and her team introduced into cells a mix of genes that induce stem-cell formation and encode the components of the CRISPR–Cas9 gene-editing system.

They targeted mutations in cells from two people — an adult with a degenerative retinal disease and an infant with severe combined immunodeficiency — and made stem cells without the defect. The method produced stem cells with 5–8% efficiency.
Stem Cell Rep. **http://doi.org/87t (2015)**

NATURAL HISTORY

Selenium linked to mass extinctions

Plummeting ocean reserves of selenium could have played a part in past mass extinctions.

Selenium and other trace elements help certain enzymes to function and perform other essential biochemical duties in organisms. John Long at Flinders University in Adelaide, Australia, and his team estimated ocean selenium levels over the past 560 million years by analysing it in marine pyrite samples. Selenium concentrations fluctuated drastically, but sharp drops coincided with several mass extinctions — including one at the end of the Triassic 200 million years ago.

Crashes in selenium levels may have acted in concert with changes in oxygen and carbon cycles to drive mass extinctions, the authors say.
Gondwana Res. **http://doi.org/834 (2015)**

MATERIALS

Super-thin superconductor

A layer of niobium diselenide ($NbSe_2$) just a few atoms thick can conduct electricity with zero resistance.

Most 3D superconducting materials lose this ability once they are in their 2D form. Miguel Ugeda at the nanoGUNE research centre in San Sebastian, Spain, Michael Crommie at the University of California, Berkeley, and their colleagues studied the behaviour of electrons in a single layer of $NbSe_2$, grown on a bilayer of atom-thick carbon.

As the team lowered the temperature to below –271 °C, the material's resistance fell to zero. The authors say that the results confirm that $NbSe_2$ is a true 2D superconductor, a class of materials that could one day be used in tiny quantum computers and other devices.

The team also saw ripples in electron density while the material was superconducting — an effect that some theories predict should not be possible.
Nature Phys. **http://doi.org/89g (2015)**

ENVIRONMENTAL SCIENCE

Chemicals hinder oil-eating microbes

Chemical dispersants added to spilled oil from the 2010 Deepwater Horizon disaster in the Gulf of Mexico (**pictured**) may have made little difference to the rates at which microbes broke down the oil.

The dispersants broke up the oil into smaller droplets to help sea-dwelling microbes to degrade it further. To study the chemicals' effect on the microbes, Samantha Joye at the University of Georgia in Athens and her colleagues created bottled mixtures of sea water, oil and dispersants that simulated environmental conditions during the spill.

Mixtures of oil and sea water were dominated by *Marinobacter* species, which can degrade a wide range of hydrocarbons. But these populations dropped when dispersant was added, whereas *Colwellia*, which degrades dispersants, increased in abundance. Adding dispersants did not seem to change the rate at which hydrocarbons were broken down in the bottled samples.
Proc. Natl Acad. Sci. USA **http://doi.org/89f (2015)**

DANIEL BELTRÁ/GREENPEACE

SOCIAL SELECTION

Popular topics on social media

How to judge scientists' strengths

When the director of a research institute asked his Twitter followers for a practical way to dig out promising candidates from the hundreds of applications sitting on his desk, they responded in spades. Ewan Birney, co-director of the EMBL European Bioinformatics Institute in Hinxton, UK, tweeted that he was procrastinating over how to shortlist the applications, which together listed around 2,500 research papers. (The process is ongoing, so Birney would not say exactly what the researchers were applying for.) He tweeted: "I get *genuinely* stuck here. If I am not going to use journal title as a proxy for quality, what do I do?" Yoav Gilad, a geneticist at the University of Chicago, Illinois, tweeted: "Read the abstracts. Read the papers. Yes, if it means 2500 papers, then get a larger committee."

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